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Babel Fish Translation

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In English:

The present invention relates to the field of the processing machines of paper of medical and domestic use, and more particularly a whole of embossing and impression. The sector of paper of medical and domestic use underwent these last years an important change. Indeed, whereas the concern of the manufacturers was for a long time to obtain products touj more resistant bears, in particular with regard to the toilet paper, and often with the detriment of the softness and the attraction of the products, the tendency is today to offer softer, more marrowy products and especially more attractive, without decreasing the quality of resistance. Thus, sees one more and more in the rays of the supermarkets, the toilet paper, the paper hankies, and the domestic essuietout comprising reasons printed color or reasons in relief obtained by embossing. With regard to the corrugated reasons, most widespread are generally reasons for simple geometrical form and very reduced, repeated a great number of times cuts some, called technical reasons. In the case of the domestic paper towel, it is frequent to find such products comprising two ganfrées layers. The reason is that these corrugated reasons make it possible to obtain a more flexible and thicker finished product. These products are carried out on sets of embossing comprising two units of embossing. The first layer is corrugated by passage between a cylinder of embossing out of steel and a rubber counterpart. The layer remains fixed at the cylinder of embossing and is pasted thanks to an integrated unit of gluing. This unit of gluing integrated distributes a film of adhesive on the reliefs of the reasons obtained by embossing. The second layer is also corrugated by passage in a second unit of embossing including/understanding a cylinder of embossing out of steel and a counterpart out of rubber, identical in the face to those of the first unit of embossing. The units of embossing are head-digs so that the two cylinders of embossing are in glance one of the other. The two layers are then assembled and stuck by

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passage between the two cylinders of embossing. One thus obtains a sheet of paper towel made up of two corrugated and stuck layers. Other reasons are also obtained by embossing. It acts of reasons known as graphic, greater dimension and repeated with a frequency much weaker. These reasons have an interest before any esthetics. These reasons are particularly used for the toilet paper. In this case, only one of the two layers can be corrugated, the second smooth remainder. Finally a third type of embossing consists in combining the two types of reasons so as to obtain a product which profits from the technical advantages of the first reasons and the aesthetic advantages for the seconds. In this type of product, which can be for example the toilet paper, the two layers undergo a stage of embossing per passage in a whole of ganfrage identical to that used to obtain the first type of reason. Gluing is done then on the graphic reasons which generally have a more important relief than technical reasons. An alternative with this third type of embossing consists in obtaining graphic reasons color. For that, an ink is added in the adhesive so as to colour the latter. Gluing being done selectively on the graphic reasons 2s, ceux-ci arises coloured whereas the reasons techniques remain colourless. Another means of decorating the paper products of medical and domestic use consists in printing reasons on the sheets. These reasons can be multicoloured. The purpose of these reasons are only to bring a visual effect. They do not have any technical role having for goal to improve the aspect of the product. These reasons are carried out by passage of layers of paper in a whole of impression. This unit can comprise several print units making it possible to obtain several reasons for 3s forms and of different colors. However, the existing techniques make it possible to carry out only corrugated reasons or printed reasons. Indeed, on chains of production of products medical and domestic use, the sets of gaufrage eL the sets of impression are indApendants and gAnAralement relatively distant the ones of the others. However, the bands of Atant paper of trAs weak Apaisseur, they have tendency dformer when they are not suitably maintained. Therefore, Mrs. if the sets are correctly synchroniss, this propensity of paper dformer entraine a dcalage between the reasons gauTrAs and the reasons printed. It is thus impossible to be able to combine reasons gauErAs and reasons printed to obtain a complex reason quickly but trAs it will occur a dAcalage between

these two types of reasons who will make the reason complex incoherent. Another inconvenient existing techniques is that it is not possible of realising reasons corrugated and printed on two layers of a product such as toilet paper or paper towel. The goal of the invention is to mitigate these inconvenients by providing a machine for the manufacture of products medical and domestic use making it possible to obtain multi-layer products, comprising reasons corrugated and of the reasons printed in only one slap, these reasons combined being able to constitute a complex reason, without risk to see the reason becoming incoherent cause of a delamination reasons corrugated and imprimés. The invention thus relates to a whole of impression of products medical and domestic use out of paper absorbent, including/understanding at least a module of impression, at least a whole of embossing - gluing and a cylinder counterpart engine. The cylinder counterpart is common to the modules of impression and the module of gautrage - gluing and entraîne lesUits modules. Such a unit makes it possible to obtain products multi- layers including/understanding of the reasons corrugated and of the reasons printed, these reasons gautrés and these reasons printed being able to be combined to form a complex reason. Goals, objects and characteristic of the invention will arise better with the reading of the description which follows made in reference to the joined drawings in which: Figure 1 represents a diagrammatic sight of a unit S of impression according to the present invention. Figure 2 represents a sight of top of a product of medical and domestic use out of absorbing paper obtained with to leave the whole of impression according to the invention. Figure 3 represents a partial sight crosses from there according to axis A-A of the product of medical and domestic use out of paper absorbent represented on figure 2. A whole of impression represented on figure 1, is made up mainly of a module of embossing - gluing, of a first module of impression 12, of a second module of impression 14. These modules are laid out around a cylinder counterpart 16 commun run with all the modules. This cylinder counterpart 16, generally out of chrome steel, is driving and involves the various modules. The module of embossing - gluing 10 is made up, of 4 cylinders in more of the cylinder counterpart 16. There is initially a cylinder gaufre 18 compared to the cylinder counterpart 16. Between the two cylinders an interval of tightening is arranged.

The cylinder gaufrior 18 is out of hard material and preferentially out of steel. It carries on its surface a comprising sleeve 20 of the engraved reasons for embossing. The material which constitutes the sleeve is a material of average hardness such as bakelite or ceramics. This sleeve can also be made up in a synthetic matter with the equivalent properties. With the vertical of the cylinder gaufrior 18, a cylinder 22 playing is the part of backpressure. The cylinder 22 can be smooth and in this case, it is out of soft material such as rubber or any equivalent material. The surface of the cylinder 22 can be the female counterpart of the cylinder gaufrior 18 and in this case, it is preferable that it is consisted of same material as this last. Between the cylinders 18 and 22, an interval of tightening allowing is arranged the passage of a layer of paper and on the level of which embossing is done. In S glance of the cylinder gaufrior 20 but according to another axis of alignment, an intermediate cylinder 24 is which is also out of soft material such as rubber or any equivalent material. In the same axis of alignment, compared to the intermediate cylinder 24, a plunger cylinder 26 is. This cylinder is also out of soft material such as rubber or any equivalent material. The plunger cylinder 26 and the intermediate cylinder 24 are contained in a vat 28 container of the adhesive. The module of impression 12 and 14 consist of three cylinders in more of the cylinder counterpart 16. A cylinder "stereotyped" applicator 30 or 32 or is compared to the cylinder counterpart 16. Between the two cylinders an interval of tightening equivalent to that is arranged which exists between the cylinder gaufrior 18 and counterpart 16 rolls it. This cylinder applicator is out of soft material such as rubber. At its surface, projecting reasons, moulded are, which are the reasons for impression. An intermediate cylinder 34 or 36 is in contact of the cylinder applicator 30 or 32. This intermediate cylinder is woven and out of hard material. Lastly, a plunger cylinder 38 or 40 is in contact of the intermediate cylinder 34 or 36. The cylinder intermediaries 34 or 36 and the plunger cylinder 38 or 40 are contained in one ink vat 42 or 44. The operation of the whole of impression according to the invention is as follows. A first lays down 46 of absorbing paper supplied with a first reel (not represented) arrives in the whole of impression according to the invention. It is guided via pulleys 48 and 50 to the module of embossing - gluing 10. It passes in the interval of tightening between the

cylinder gaufre 18 and rolls it of backpressure 22. The layer arises corrugated this interval, thanks to the pressure exerted by the reasons for embossing engraved on sleeve 20 and marries these reasons for embossing. The plunger cylinder 26 takes adhesive in vat 28. The adhesive is transferred on the intermediate cylinder 24. The intermediate cylinder 24 demounting adhesive on the corrugated reasons which form protuberances. According to a mode of realization preferred, the adhesive used is colorce. A deuxième layer 52 of absorbing paper, supplied with a second reel (not represented), arrives in the whole of impression according to the invention. It is guided by the intermediary of a pulley 54 up to the level of the interval of tightening between the cylinder gaufre 18 and the driving counterpart 16. In this interval, layer 46 corrugated and guided by the cylinder gaufre 18, and lays down it 52 are assembled. The adhesive déposee on the corrugated reasons allows the solidarisation of the two layers. The reasons for embossing thus arise color thanks to the adhesive deposited on the interior face of layer 46. The two solidarises layers are then guided around the cylinder counterpart 16 to the first module of impression 12 and pass in the interval of tightening enters the cylinder counterpart 16 and rolls it applicator 30. On the level of the first module of impression 12, the plunger cylinder 38 takes ink in the ink 42 vat. Ink is then transferred on the intermediate cylinder 34. This intermediate cylinder 34 demounting then ink on the reasons for projecting impression on the surface of the cylinder applicator 30. The cylinder applicator 30 then deposits ink on the outside of layer 46 and thus prints a first set of reasons on the product consisted two layers 46 and 52. Both couches are then guided by against part 16 towards the deuxième module of impression 14. By a sequence of stages identical to that of the stages of réalise impression on the level of the first module of impression 12, a second set of reasons is printed on the outside of layer 46. The two layers are then guided by against part to pulley 56. Via this pulley 56 and pulley 58, the two layers leave the whole of impression according to the invention. The product obtained is represented on figure 2, on the side of the printed face. Layer 46 is seen by its outside. On this face complex reasons in the shape of flower are represented. These complex reasons are consisted the corrugated reasons 60, reasons 62 printed on the level of the first module of impression and reasons 64

printed on the level of the second module of impression. The ink deposited on the corrugated reasons 60 appears by transparency since it was deposited on the interior face of layer 46. According to a mode of realization preferred, the reasons are of different colors. On figure 3, one can observe a partial sight in cross according to axis A-A of the product represented on figure 2. This product 66 is consisted of two layers 46 and 52. Layer 46 has two elements 68 and 70 of the reason corrugated 60.

These two elements represent, on the interior face of the layer 48, two protuberances on which was deposited the adhesive 72 which solidarizes layers 46 and 52. On the outside of layer 46, one observes deposits of ink 74 correspondent to the printed reason 62. The deposits of ink corresponding to the printed reason 64 are not represented on this figure.

The whole of impression according to the invention thus makes it possible to realize in only one stage of the ganfrés reasons and the printed reasons of different forms and different colors. Moreover, one notes that between the various stages of embossing and impression, the layers are touj bear guided by the driving counterpart and marry the latter, which returns any deformation of impossible paper. Thanks to the whole of impression according to the invention, it is thus possible to combine corrugated reasons and printed reasons in order to obtain a complex reason, without any risk to see appearing a shift between the corrugated reasons and the printed reasons. Another advantage of the device according to the invention is that different the modules are interchangeable.

Indeed, it is possible to replace a module of impression by one second module of embossing - gluing. Moreover, the use of a sleeve laid out on the cylinder of embossing makes it possible to change reasons very quickly. Indeed, contrary to the traditional sets of embossing whose disassembling is a delicate and long operation, the whole of impression according to the invention is very easily dismountable. According to another mode of realization, the whole of impression according to the invention comprises three entries so as to manufacture a product comprising three layers. The third layer which constitutes the second external fold is guided towards a module of embossing - gluing different from the first of such kind that the two external layers are corrugated and pasted, the interior layer smooth remainder. One then obtains a finished product made up of three layers, whose two

external layers comprise ganfrés and printed reasons.

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La présente invention concerne le domaine des machines de traitement du papier à usage sanitaire et domestique, et plus particulièrement un ensemble de gaufrage et d'impression.

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